FORM AE-100

DEPARTMENT OF TRANSPORT STATEMENT OF COMPLIANCE OF AIRCRAFT OR AIRCRAFT COMPONENTS WITH THE AIRWORTHINESS REQUIREMENTS					
				AE-100 No.:	AE829
				Initial Issue Date:	14 January, 2009
				Revision:	1
				Revision Date:	22 July, 2009
Aircraft Mfr:	MD Helicopters Inc.	Model / Type		Approval No.:	SH09-1
Aircraft Model:	MD600N				
Registration:	ALL ELIGIBLE	Airplane	☐	Delegation No.:	290M
		Helicopter	☒	Delegate Name:	E. Burgoin
		Appliance	☐	Company:	*AERO* Design Ltd.
		Component	☐		

LIST OF APPROVED REPORTS AND DATA

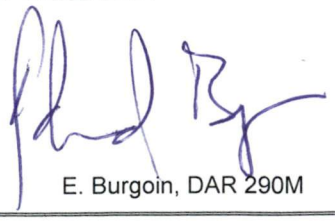
Document Number	Revision	Document Title	Compliance Status
DCL829-1	1	Document Control List and all documents referred to therein	As per Compliance Program, CP829, Revision 0
DCL829-11	1	Document Control List and all documents referred to therein	
ER829.02	0	Engineering Report	
82902	0	Fixed Step Installation	
82932	0	Down Tube Fabrication	
		DATA APPROVED BY TRANSPORT CANADA	

CERTIFICATION

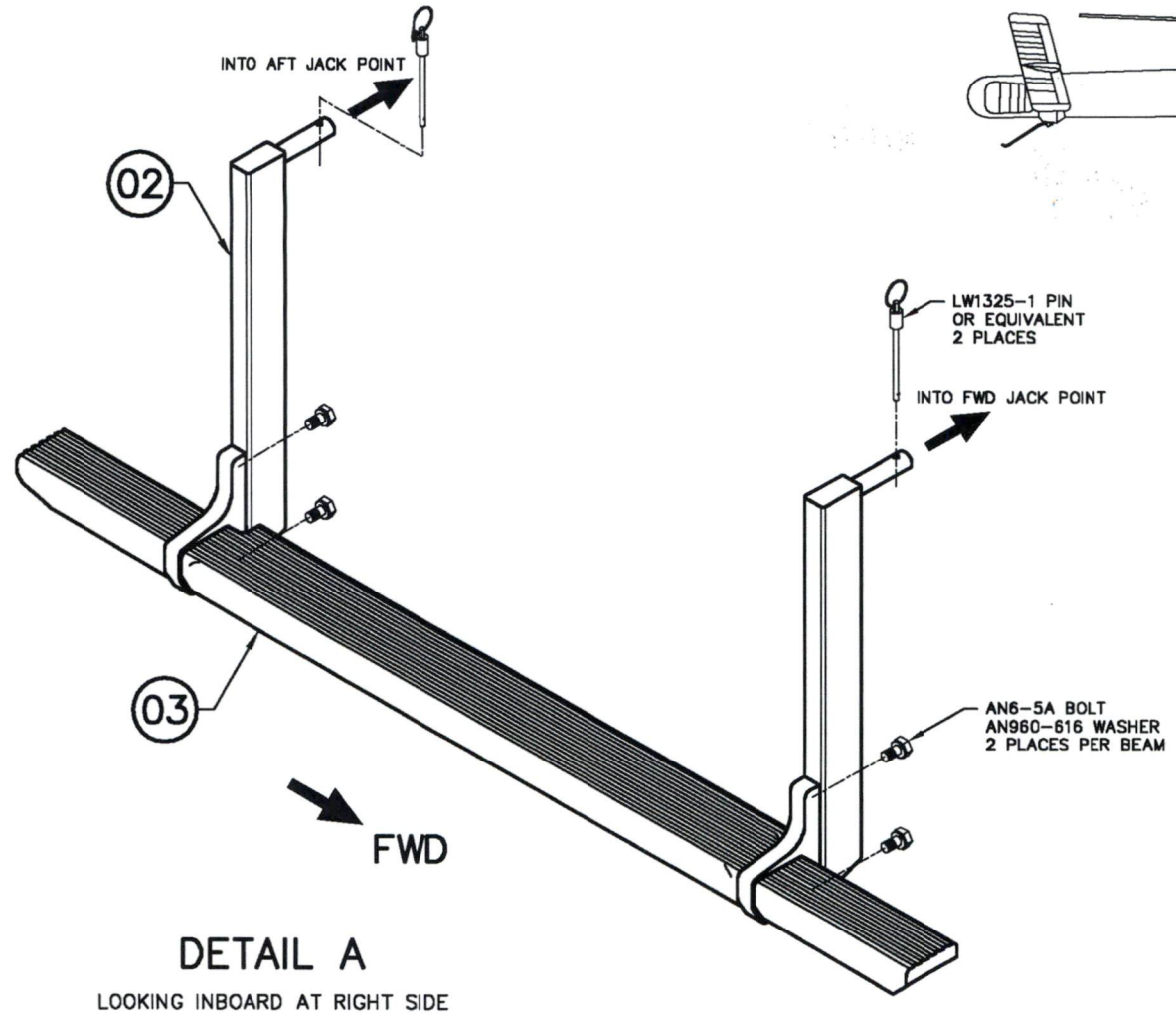
UNDER THE AUTHORITY VESTED IN ME BY THE DEPARTMENT OF TRANSPORT, I HEREBY CERTIFY THAT THE DATA LISTED ABOVE AND ON THE ATTACHED SHEETS NUMBERED Nil HAVE BEEN EXAMINED IN ACCORDANCE WITH ESTABLISHED PROCEDURES AND FOUND TO COMPLY, TO THE BEST OF MY KNOWLEDGE AND BELIEF WITH THE PERTINENT COMPLIANCE REQUIRMENTS.

I THEREFORE [☐] RECOMMEND FOR APPROVAL OF THESE DATA

[☒] APPROVE THESE DATA

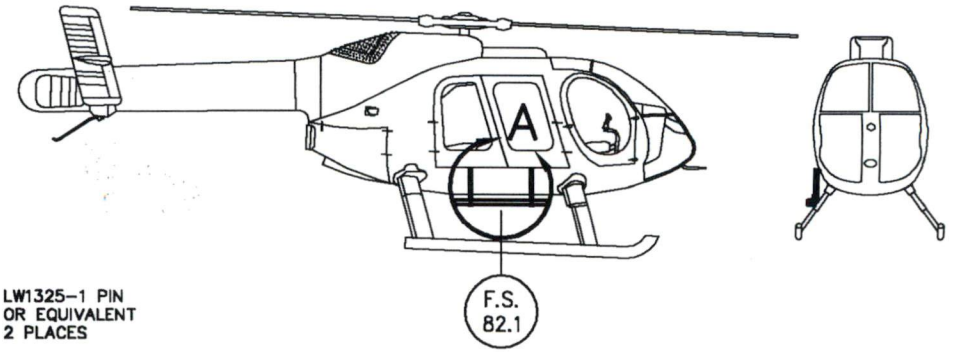


E. Burgoin, DAR 290M



DETAIL A

LOOKING INBOARD AT RIGHT SIDE



01 STEP INSTALLATION

RIGHT SIDE SHOWN, LEFT SIDE IDENTICAL

QTY	PART NO.	ITEM	DESCRIPTION
4	AN960-616		WASHER
4	AN6-5A		BOLT
2	LW1325-1		PIN
1	82910-01	03	STEP ASSEMBLY
2	82932-01	02	BEAM
	82902-01	01	FIXED STEP INSTALLATION

LIST OF MATERIALS

APPROVALS	DATE
DRAWN: JEFF CLARKE	10 JULY 2008
CHECKED: E. BURGOIN	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCES ON:

DECIMALS		ANGLES
X.XXX	±0.010	±1/2°
X.XX	±0.03	
X.X	±0.1	

AERO DESIGN LTD.
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tel: (403) 250-8027 fax: (403) 250-8333 www.aerodesign.ca

MCDONNELL DOUGLAS MD600N FIXED STEP INSTALLATION

NOT TO SCALE	DWG. SIZE	DWG. NO.	REV.
SHEET 1 OF 2	A4	82902	0

REV.	DESCRIPTION OF CHANGE	INITIALS	DATE
0	*	*	*

NOTES

1. INSTALLATION MAY BE APPLIED TO THE RIGHT OR LEFT SIDE. LATERAL ARM IS NEGATIVE ON LEFT SIDE INSTALLATION.
2. TORQUE AN6 BOLTS TO 95–110 INCH–POUNDS.

WEIGHT AND BALANCE

ITEM	DESCRIPTION	WEIGHT (LB)	LONGITUDINAL ARM (IN)	LONGITUDINAL MOMENT (LB–IN)	LATERAL ARM (IN)	LATERAL MOMENT (LB–IN)
02	BEAMS (PAIR)	5.0	82.1	410.5	26.6	133.0
03	STEP ASSEMBLY	5.0	82.1	410.5	29.3	146.5
01	FIXED STEP INSTALLATION	10.0	82.1	821.0	28.0	279.5

APPROVALS		DATE
DRAWN:	JEFF CLARKE	10 JULY 2009
CHECKED:	E. BURGOIN	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
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MCDONNELL DOUGLAS MD600N FIXED STEP INSTALLATION

NOT TO SCALE	DWG. SIZE	DWG. NO.	REV.
SHEET 2 OF 2	A4	82902	0

INSTRUCTIONS FOR CONTINUED AIRWORTHINESS
ICA 829.90

MCDONNELL DOUGLAS MD600N

QUICK RELEASE STEP INSTALLATION
FIXED STEP INSTALLATION

Preface

These Instructions for Continued Airworthiness shall be included in the rotorcraft Maintenance Manual when the Quick Release and/or Fixed Step is installed in accordance with AERO Design Ltd. Document Control List DCL829-1, Revision 1, or later approved revision.

The information contained herein supplements the information in the basic Maintenance Manual. For Maintenance practices and procedures not contained in these Instructions for Continued Airworthiness refer to the basic Maintenance Manual and its approved supplements.

Revision 1
Date: 13 July, 2009

AERO Design Ltd.
Engineering Consultants

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RECORD OF REVISIONS

Revision Number	Issue Date	Date Inserted	By
0	27 November 2008		Original Issue
1	13 July 2009		

LIST OF EFFECTIVE PAGES

List of Revisions	Revision 0 (Original Issue) Revision 1	27 November, 2008 13 July, 2009

List of Effective Pages

Description	Pages	Revision No.
Cover	1	1
Revision Record/List of Effective Pages	2	1
Table of Contents	3	1
00-00-00	4-5	1
04-00-00	6	1
05-00-00	7-9	1
25-50-00	10-13	1

TABLE OF CONTENTS

CHAPTER 0 – INTRODUCTION

0-1 SCOPE

The following Instructions for Continued Airworthiness (ICA) satisfy the requirements of 14 CFR 27.1529, and provide the information necessary to complete the on-going maintenance and inspections required for rotorcraft embodying the Quick Release Step and/or Fixed Step Installations as described herein.

0-2 DEFINITIONS AND ABBREVIATIONS

ICA - Instructions for Continued Airworthiness

LH - Left Hand

RH - Right Hand

0-3 DISTRIBUTION

Copies of this ICA and amendments shall be distributed to all known purchasers of the Quick Release Step and/or Fixed Step. Requests for a copy may be made in writing to:

AERO Design Ltd.
2013 39th Avenue N.E.
Calgary, Alberta
T2E 6R7
Fax: 403-250-8333
Email: info@aerodesign.ca

Any changes will be sent to Transport Canada. All changes will be recorded in the Record of Revisions page at the front of this document.

0-4 COMPATIBILITY

Prior to incorporating this modification, the installer shall establish that the inter-relationship between this change and any other modification(s) incorporated will not adversely affect the airworthiness of the helicopter.

0-5 GENERAL DESCRIPTION

The Quick Release Step installation consists of a step assembly which is attached to quick release mounting provisions installed on the helicopter. These mounting provisions are capable of mounting various equipment including cargo baskets.

The step itself consists of an aluminum extrusion attached to brackets near the ends with fittings that lock into the quick release mechanism.

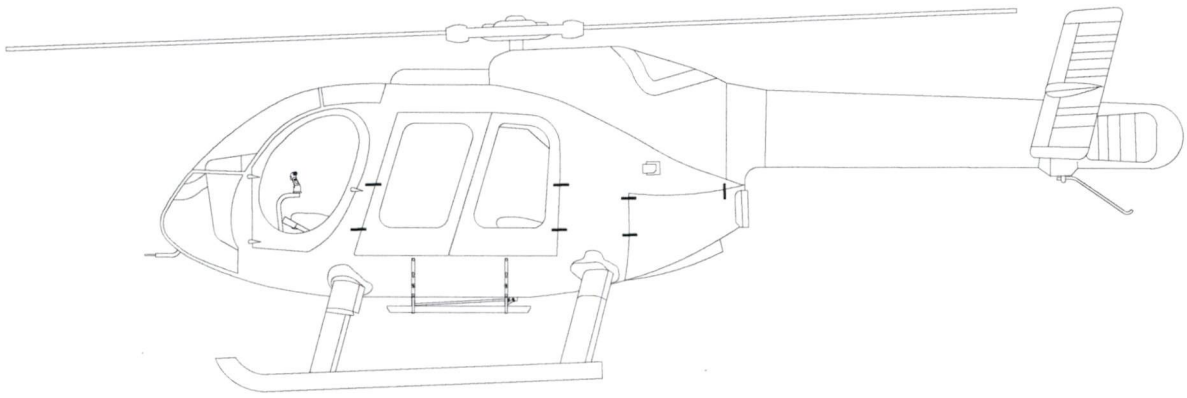

Figure 2 –Step Installation

(Quick Release configuration shown, Fixed configuration similar)

The Fixed Step installation uses the same step assembly as the Quick Release configuration, but the step is bolted to the down tubes. The down tubes are lighter wall thickness tube, and there are no provisions to install other equipment. The Fixed Step installation is not truly fixed in place, it can be quickly removed by pulling out the ball lock pins in the jack fittings.

CHAPTER 4 - AIRWORTHINESS LIMITATIONS

Transport Canada

The Airworthiness Limitations section is approved by the Minister and specifies maintenance required by any applicable airworthiness or operating rule unless an alternative program has been approved by the Minister.

FAA

The Airworthiness Limitations section is FAA approved and specifies maintenance required under Sections 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.

No additional airworthiness limitations have been imposed due to installation of the Quick Release Step or Fixed Step.

CHAPTER 5 – INSPECTION REQUIREMENTS

5-1 INSPECTION SCHEDULE

Continued airworthiness is contingent upon compliance with the following inspection items. These items shall be completed in conjunction with the rotorcraft Maintenance Inspection schedule, or other approved program, or upon removal and replacement of any component of Step Installation.

Daily Inspection

1. Inspection Area: Step
   a) Inspect the step attachment to the beams for condition and security.
   b) Quick Release Step only: Ensure quick release mechanism is completely extended, flush with the outboard surface of the beam.

300 Hour or Annual Inspection

Refer to ICA828.90 for inspection of the Quick Release Mounting Provisions.

1. Inspection Area: Step
   a) Visually inspect welds attaching end brackets to step extrusion for cracks, corrosion or other damage.
   b) Visually inspect step for damage.
   c) Visually inspect lugs/bolts attaching the step to the beams for security and damage.

Special Inspections

Following a hard landing inspect the Step installation in accordance with the 300 hour or annual inspection listed above.

5-2 DAMAGE LIMITS / REPAIR INSTRUCTIONS

Refer to ICA828.90 for the Quick Release Cargo Basket for further limits and repair instructions applicable to the Quick Release Step Installation.

If damage is found in the inspections above, repair in accordance with the instructions below.

1. Step Assembly

Part	Type of Damage	Max. Allowable	Repair
Step Support Bracket	Corrosion	0.010" deep	Blend up to 0.010" deep with scotchbrite.
	Scratches / Nicks	0.010" deep x 0.5" long	Blend up to 0.010" deep with scotchbrite.
	Cracks/Dents	None	N/A
	Bent Lugs	None	N/A
Step Section	Corrosion	2" x 2" x 0.010" deep	Blend up to 0.010" deep with scotchbrite.
	Scratches / Nicks	0.010" deep x 1" long	Blend up to 0.010" deep with scotchbrite.
	Cracks / Dents	None	N/A
	Permanent Deflection of Step	0.25" max at middle of step	None

2. Steel Beams – Quick Release Step

Part	Type of Damage	Max. Allowable	Repair
Steel Beam	Corrosion	0.030" deep	Blend up to 0.030" deep with scotchbrite.
	Scratches / Nicks (Outboard face)	0.030" deep x 0.125" wide	Blend up to 0.030" deep with scotchbrite.
	Scratches / Nicks (all other sides)	0.060" deep x 0.125" wide	Blend up to 0.060" deep with scotchbrite.
	Cracks/Dents	None	N/A
	Elongation of Keyway	See figure 3	None
	Widening of slots	27/64" (0.422) diameter (check with a 27/64" drill)	None

Figure 3 – Keyway dimensions

3. Steel Beams – Fixed Step

Part	Type of Damage	Max. Allowable	Repair
Steel Beam	Corrosion	0.020" deep	Blend up to 0.020" deep with scotchbrite.
	Scratches / Nicks (Outboard face)	0.020" deep x 0.125" wide	Blend up to 0.020" deep with scotchbrite.
	Scratches / Nicks (all other sides)	0.030" deep x 0.125" wide	Blend up to 0.030" deep with scotchbrite.
	Cracks/Dents	None	N/A

5-3 PROTECTIVE TREATMENT INFORMATION

1. Step Assembly

The Step Assembly is supplied powder coated white. If the powder coat is damaged, touch up with white polyurethane paint. The tread area is painted with anti-skid paint. If the anti-skid paint is damaged, touch up with Randolph X1567 Wingwalk grip paint or equivalent.

2. Beams

The beams are supplied powder coated white. If the powder coat is damaged, touch up with white polyurethane paint.

CHAPTER 25 – EQUIPMENT AND FURNISHINGS

The Step Installations may be applied to the right and/or left side of the helicopter. The quick release step can only be installed on one side, the fixed step must be installed on the opposite side.

25-1 QUICK RELEASE STEP INSTALLATION

Refer to Figure 4.

1. Install Quick Release Mounting Provisions. Refer to ICA828.90.
2. Set upper attachment of Step Assembly 82910-01 into upper keyway in forward and aft beams.
3. Lift step until lower attachment fitting hits stop. Push fitting into keyway and slide step down until locked.

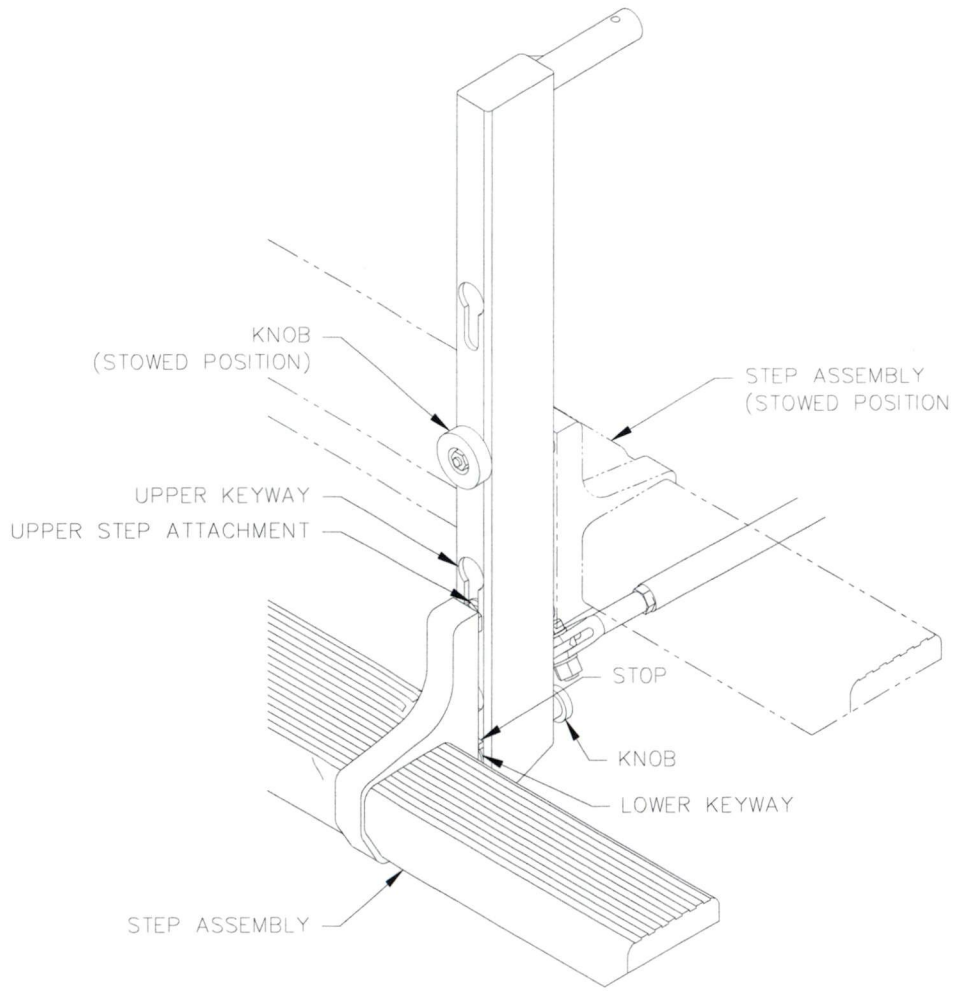

Figure 4 – Step Attachment

25-2 QUICK RELEASE STEP REMOVAL

Refer to Figure 4.

1. Pull knob at bottom end of forward beam and lift step until lower attachment fitting is free of keyway. Keep upper attachment in keyway on beam.
2. Pull knob at bottom end of aft beam and lift step until lower attachment fitting is free of keyway. Keep upper attachment in keyway on beam.
3. Lift step until upper attachments are out of keyways on both beams and remove from helicopter.

25-3 FIXED STEP INSTALLATION

1. Remove step or jack fitting from jack points at FS 67.3 (PFS 18.76) and FS 96.9 if installed.
2. Insert pin at top of 82932-01 Beam into jack fitting. Secure beam with existing ball lock pin LW1325-1 through floor. Repeat at other jack fitting.
3. If step is not already installed on beams: Install Step Assembly 82910-01 on bottom holes of beams using four AN6-5A Bolts and AN960-616 washers. Torque AN6 bolts to 95-110 in-lbs.

25-4 FIXED STEP REMOVAL

1. Remove LW1325-1 ball lock pins securing beams to jack fittings. Remove beams.
2. Optional: Remove four AN6-5A Bolts and AN960-616 Washers securing Step Assembly to Beams. Remove Step Assembly from beams.

25-5 WEIGHT AND BALANCE

Quick Release Step

Three weight and balance configurations are required for the pilot: Provisions only; Provisions and Step (outboard position); Provisions and Step (stowed position). These configurations are required as the step may be removed/installed in the field by the pilot.

Standard

P/N	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	moment
	Provisions Only	lb	in	in-lb	in	in-lb
82802-01	**Provisions Installation**	**11.2**	**85.6**	**958.7**	**-20.5**	**-229.6**
	Provisions and Step					
82910-01	Quick Release Step	5.0	82.1	410.5	-29.5	-147.5
82901-01	**Quick Release Step Installation**	**16.2**	**84.5**	**1369.2**	**-23.3**	**-377.1**
	Provisions and Step (Stowed)					
82910-01	Quick Release Step	5.0	82.1	410.5	-23.7	-118.5
82901-01	**Quick Release Step Installation**	**16.2**	**84.5**	**1369.2**	**-21.5**	**-348.1**

Metric

P/N	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	Moment
	Provisions Only	kg	mm	mm-kg	mm	mm-kg
82802-01	**Provisions Installation**	**5.1**	**2174**	**11087**	**-521**	**-2657**
	Provisions and Step					
82710-01	Quick Release Step	2.3	2085	4796	-749	-1723
82701-01	**Quick Release Step Installation**	**7.4**	**2146**	**15883**	**-592**	**-4380**
	Provisions and Step (Stowed)					
82710-01	Quick Release Step	2.3	2085	4796	-602	-1385
82702-01	**Quick Release Step Installation**	**7.4**	**2146**	**15883**	**-546**	**-4042**

Note: Lateral arms are given for left side installation. For installation on right side, lateral arms are positive.

Fixed Step

Standard

P/N	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	moment
		lb	in	in-lb	in	in-lb
82932-01	Beams (Pair)	5.0	82.1	410.5	26.6	133.0
82910-01	Quick Release Step	5.0	82.1	410.5	29.3	146.5
82902-01	**Fixed Step Installation**	**10.0**	**82.1**	**821.0**	**28.0**	**279.5**

Metric

P/N	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	Moment
		kg	mm	mm-kg	mm	mm-kg
82932-01	Beams (Pair)	2.3	2085	4717	676	1529
82910-01	Quick Release Step	2.3	2085	4717	744	1683
82902-01	**Fixed Step Installation**	**4.5**	**2085**	**9434**	**714**	**3212**

Note: Lateral arms are given for right side installation. For installation on left side, lateral arms are negative.

25-6 STRUCTURAL FASTENER DATA

Refer to Maintenance Manual CSP-HMI-2, Section 20, for torque values not listed in this ICA.

AERO Design Ltd.

ENGINEERING REPORT
ER829.01

FIXED STEP INSTALLATION

McDonnell Douglas MD600N

Approved: E. Burgoin, P. Eng.

Prepared by: Jeff Clarke

Revision 0
Date: 22 July, 2009

AERO Design Ltd.
Engineering Consultants

2013 – 39th Avenue N.E., Calgary, Alberta T2E 6R7
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E-Mail: info@aerodesign.ca

TABLE OF CONTENTS

1.0 INTRODUCTION

When the quick release mounting provisions are installed on one side of the helicopter, there is currently no way to install the same provision on the opposite side to install a quick release step. This installation is similar to the quick release step already approved on STC SH09-1, except that the mounting provisions on the helicopter are changed, and the step is bolted to the down tubes. This does not remove the ability to quickly remove the step, as the mounting provisions are secured in the existing jack points using ball-lock (pip) pins, but to differentiate this configuration from the existing quick release step, this configuration is referred to as a "fixed step".

2.0 REFERENCE

AERO Design Ltd. Drawings 82902

MIL-HDBK-5J

3.0 BASIS OF CERTIFICATION

McDonnell Douglas MD600N – TCDS H-95:

FAR 27, dated October 2, 1964, through Amendment 27-30 with the following deviations: 27.562 and 27.863 excluded (earlier models did not have these requirements); 27.561 at Amendment 27-24; 27.607 at Amendment 27-3; 27.785 at Amendment 27-20; 27.1325 at Amendment 27-12.

Transport Canada Additional Airworthiness Requirements as published in the Canadian Airworthiness Manual, Chapter 527, change 3 dated 1 January 1994: 527.1093(b)(iii); 527.1301-1; 527.l557(c)(3); 527.1581(e); 527.1585(h) Operating Procedures.

This report demonstrates that the installation of the Fixed Step complies with the original basis of certification.

4.0 ANALYSIS OF CURRENT AIRWORTHINESS DIRECTIVES (AD'S)

This installation does not impact on any current ADs.

5.0 STRUCTURAL COMPLIANCE

The inertia ~~and~~ aerodynamic and passenger loads on the step are not changed from the loads analyzed in ER829.01. Construction of the step has not changed. Therefore, the step is acceptable.

The mounting provisions are changed, in that the down tube is now lighter wall (0.065" from 0.120"), and the struts back to the cargo hook mount are not used. The change is justified as follows:

- The inertia and aerodynamic loads from the step are not significant.
- The original configuration is designed to support the weight of a cargo basket (45 lbs) plus cargo (200 lbs) at 5.25g ultimate maneuvering load (1286 lbs ultimate). There was no permanent deformation of the down tube found after ultimate load test on the basket installation. The step is only intended to carry the loads of people getting in and out of the helicopter on the ground. Maneuvering load does not apply
- The basket applies a large bending moment to the down tube due to the centre of the basket being 11.25" outboard of the tube. The step is only 2.25" out from the tube. The struts to the cargo hook attachment are no longer required to support the large bending moment of the basket.
- Loads at the attachment to the helicopter are lower than in the cargo basket configuration.
- There is no provision to install other equipment on the down tube.

For the reasons stated above, the fixed step installation is acceptable for installation on the McDonnell Douglas MD600N.

6.0 COMPLIANCE WITH 27.251 AND 27.629

There is no significant change to the arrangement of this installation from the configuration already approved for the quick release step on STC SH09-1.

DOCUMENT CONTROL LIST

DOCUMENT NO.	DOCUMENT CONTENT	REVISION
INSTALLATION DOCUMENTS		
82901	Quick Release Step Installation	0
ICA829.90	Instructions for Continued Airworthiness	0
FMS828.91	Flight Manual Supplement	0
FABRICATION DOCUMENTS		
DCL829-11	Document Control List for Quick Release Step	0 ✓
ENGINEERING DOCUMENTS		

APPROVAL:

Transport Canada / Transports Canada
AIRCRAFT CERTIFICATION DIVISION
APPROVED
By
Appr'l No. SH09-1
Appr'l Date 09-01-27
Issue No. 1
Issue Date 09-01-27
YY - MM - DD

ORIGINAL DATE: 3 December, 2008
REVISION DATE:

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SHEET 1 OF 1

McDonnell Douglas MD600N Quick Release Step Installation

DCL829-1

Rev. **0**

DOCUMENT CONTROL LIST

DOCUMENT NO.	DOCUMENT CONTENT	REVISION
FABRICATION DOCUMENTS		
82910	Step Assembly	0
80021	Step Support	0
ENGINEERING DOCUMENTS		
ER829.01	Engineering Report	0

APPROVAL:

Transport Canada / Transports Canada

AIRCRAFT CERTIFICATION DIVISION

APPROVED

By

Appr'l No. SH09-1

Appr'l Date 09-01-27

Issue No. 1

Issue Date 09-01-27

YY-MM-DD

ORIGINAL DATE: 3 December, 2008

REVISION DATE:

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SHEET 1 OF 1

McDonnell Douglas MD600N Quick Release Step Fabrication

DCL829-11

Rev. **0**

FORM AE-100

DEPARTMENT OF TRANSPORT STATEMENT OF COMPLIANCE OF AIRCRAFT OR AIRCRAFT COMPONENTS WITH THE AIRWORTHINESS REQUIREMENTS					
			AE-100 No.:	AE829
			Initial Issue Date:	14 January, 2009
			Revision:	0
			Revision Date:	
Aircraft Mfr:	MD Helicopters Inc.	Model / Type	Approval No.:	SH09-1
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		Helicopter ☒	Delegate Name:	E. Burgoin
		Appliance ☐	Company:	*AERO* Design Ltd.
		Component ☐		

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82910	0	Step Assembly	
80021	0	Step Support Fabrication	
		DATA APPROVED BY TRANSPORT CANADA	
ICA829.90	0	Instructions for Continued Airworthiness	

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UNDER THE AUTHORITY VESTED IN ME BY THE DEPARTMENT OF TRANSPORT, I HEREBY CERTIFY THAT THE DATA LISTED ABOVE AND ON THE ATTACHED SHEETS NUMBERED Nil HAVE BEEN EXAMINED IN ACCORDANCE WITH ESTABLISHED PROCEDURES AND FOUND TO COMPLY, TO THE BEST OF MY KNOWLEDGE AND BELIEF WITH THE PERTINENT COMPLIANCE REQUIRMENTS.

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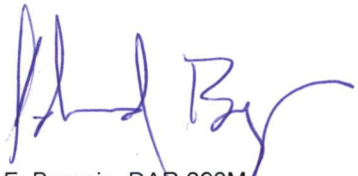
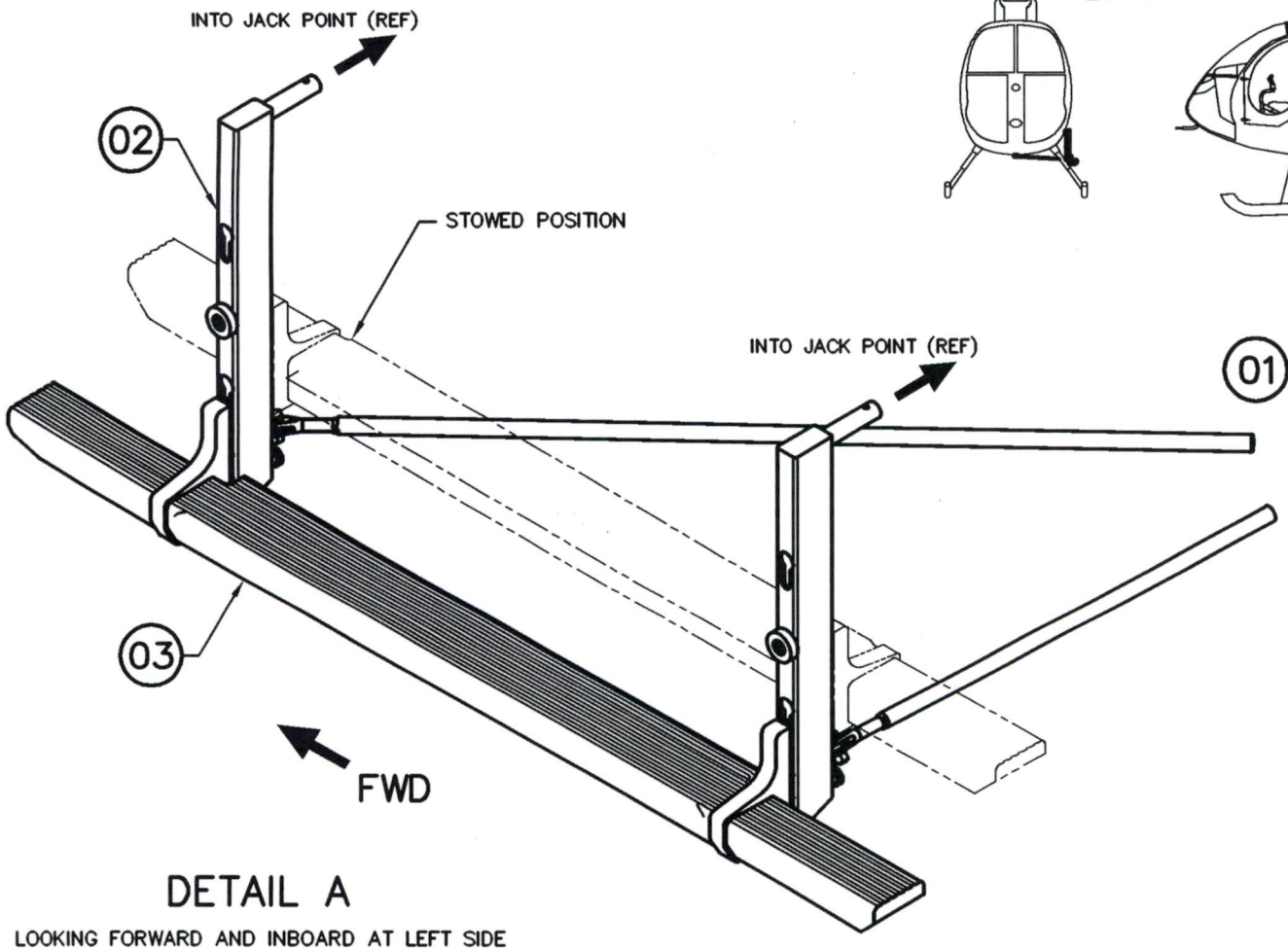
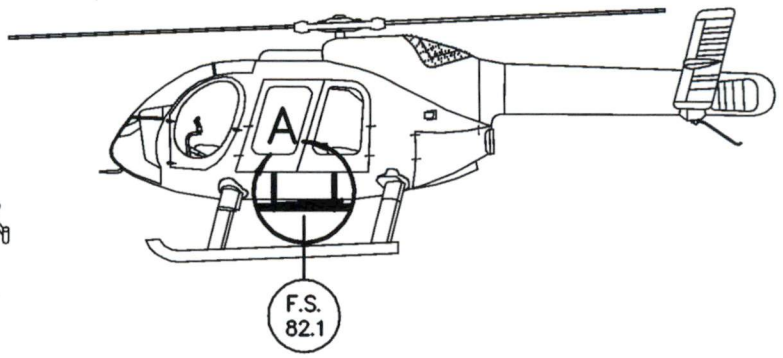


E. Burgoin, DAR 290M



DETAIL A

LOOKING FORWARD AND INBOARD AT LEFT SIDE



01 STEP INSTALLATION

LEFT SIDE SHOWN, RIGHT SIDE IDENTICAL

APPROVALS	DATE
DRAWN: JEFF CLARKE	19 NOV 2008
CHECKED: E. BURGOIN	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCES ON:

DECIMALS		ANGLES
X.XXX	±0.010	±1/2°
X.XX	±0.03	
X.X	±0.1	

AERO DESIGN LTD.

CONSULTING ENGINEERS, TRANSPORT CANADA APPROVALS, DAR 290M
2013 – 39TH AVENUE N.E., CALGARY, ALBERTA, CANADA, T2E 6R7
tel: (403) 250-8027 fax: (403) 250-8333 www.aerodesign.ca

MCDONNELL DOUGLAS MD600N QUICK RELEASE STEP INSTALLATION

NOT TO SCALE	DWG. SIZE	DWG. NO.	REV.	
SHEET 1 OF 2	A4	82901	0	

REV.	DESCRIPTION OF CHANGE	INITIALS	DATE
0	*	*	*

NOTES

1. INSTALLATION OF THE QUICK RELEASE MOUNTING PROVISIONS IN ACCORDANCE WITH DRAWING 82802 IS REQUIRED PRIOR TO THIS INSTALLATION.

2. INSTALLATION MAY BE APPLIED TO THE LEFT OR RIGHT SIDE DEPENDING ON PROVISION INSTALLATION. LATERAL ARM IS POSITIVE WHEN INSTALLED ON THE RIGHT.

WEIGHT AND BALANCE

ITEM	DESCRIPTION	WEIGHT (LB)	LONGITUDINAL ARM (IN)	LONGITUDINAL MOMENT (LB-IN)	LATERAL ARM (IN)	LATERAL MOMENT (LB-IN)
02	QUICK RELEASE PROVISIONS	11.2	85.6	958.7	-20.5	-229.6
03	STEP ASSEMBLY	5.0	82.1	410.5	-29.5	-147.5
01	QUICK RELEASE PROVISIONS	16.2	84.5	1369.2	-23.3	-377.1
02	QUICK RELEASE PROVISIONS	11.2	85.6	958.7	-20.5	-229.6
03	STEP ASSEMBLY (STOWED)	5.0	82.1	410.5	-23.7	-118.5
01	QUICK RELEASE PROVISIONS	16.2	84.5	1369.2	-21.5	-348.1

QTY	PART NO.	ITEM	DESCRIPTION
1	82910-01	03	STEP ASSEMBLY
1	82802-01	02	QUICK RELEASE PROVISIONS INSTALLATION
	82901-01	01	QUICK RELEASE STEP INSTALLATION

LIST OF MATERIALS

APPROVALS	DATE
DRAWN: JEFF CLARKE	19 NOV 2008
CHECKED: E. BURGOIN	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCES ON:

DECIMALS		ANGLES
X.XXX	±0.010	±1/2°
X.XX	±0.03	
X.X	±0.1	

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MCDONNELL DOUGLAS MD600N QUICK RELEASE STEP INSTALLATION

NOT TO SCALE	DWG. SIZE	DWG. NO.	REV.	
SHEET 2 OF 2	A4	82901	0	

INSTRUCTIONS FOR CONTINUED AIRWORTHINESS
ICA 829.90

QUICK RELEASE STEP

Preface

These Instructions for Continued Airworthiness shall be included in the rotorcraft Maintenance Manual when the Quick Release Step assembled in accordance with AERO Design Ltd. Document Control List DCL829-11, Revision 0, or later approved revision, is installed.

The information contained herein supplements the information in the basic Maintenance Manual. For Maintenance practices and procedures not contained in these Instructions for Continued Airworthiness refer to the basic Maintenance Manual and its approved supplements.

Revision 0
Date: 27 November, 2008

AERO Design Ltd.
Engineering Consultants

2013 – 39th Avenue N.E., Calgary, Alberta T2E 6R7
Phone: (403) 250-8027
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RECORD OF REVISIONS

Revision Number	Issue Date	Date Inserted	By
0	27 November 2008		Original Issue

LIST OF EFFECTIVE PAGES

List of Revisions Revision 0 (Original Issue) 27 November, 2008

List of Effective Pages

Description	Pages	Revision No.
Cover	1	0
Revision Record/List of Effective Pages	2	0
Table of Contents	3	0
00-00-00	4-5	0
04-00-00	6	0
05-00-00	7-9	0
25-50-00	10-11	0

TABLE OF CONTENTS

CHAPTER 0 – INTRODUCTION

0-1 SCOPE

The following Instructions for Continued Airworthiness (ICA) satisfy the requirements of 14 CFR 27.1529, and provide the information necessary to complete the on-going maintenance and inspections required for rotorcraft embodying the Quick Release Step as described herein.

0-2 DEFINITIONS AND ABBREVIATIONS

ICA - Instructions for Continued Airworthiness

LH - Left Hand

RH - Right Hand

0-3 DISTRIBUTION

Copies of this ICA and amendments shall be distributed to all known purchasers of the Quick Release Step. Requests for a copy may be made in writing to:

AERO Design Ltd.
2013 39th Avenue N.E.
Calgary, Alberta
T2E 6R7
Fax: 403-250-8333
Email: info@aerodesign.ca

Any changes will be sent to Transport Canada. All changes will be recorded in the Record of Revisions page at the front of this document.

0-4 COMPATIBILITY

Prior to incorporating this modification, the installer shall establish that the inter-relationship between this change and any other modification(s) incorporated will not adversely affect the airworthiness of the helicopter.

0-5 GENERAL DESCRIPTION

The Quick Release Step installation consists of a step assembly which is attached to quick release mounting provisions installed on the helicopter. These mounting provisions are capable of mounting various equipment including cargo baskets.

The step itself consists of an aluminum extrusion attached to brackets near the ends with fittings that lock into the quick release mechanism.

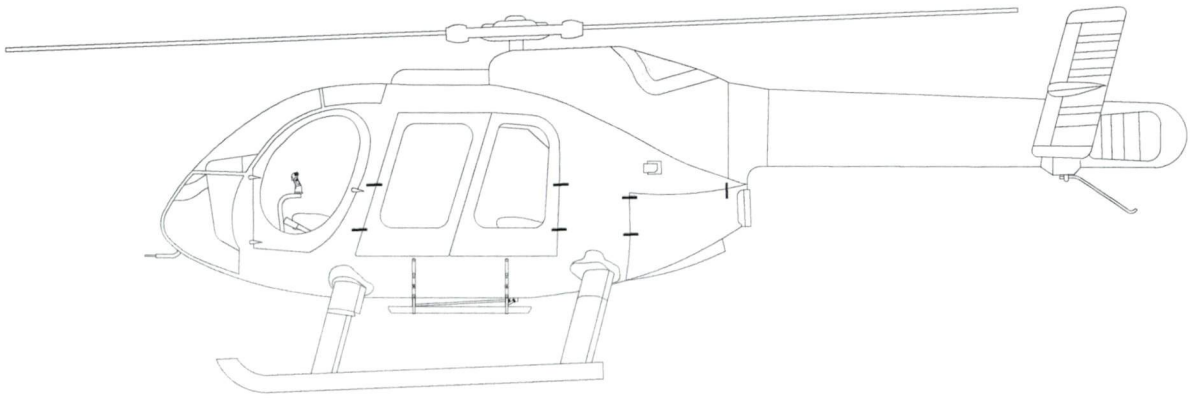

Figure 2 –Step Installation

CHAPTER 4 - AIRWORTHINESS LIMITATIONS

Transport Canada

The Airworthiness Limitations section is Transport Canada approved and specifies maintenance required under Section 571 of the Canadian Aviation Regulations, unless an alternative program has been approved.

FAA

The Airworthiness Limitations section is FAA approved and specifies maintenance required under Sections 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.

No additional airworthiness limitations have been imposed due to installation of the Quick Release Step.

CHAPTER 5 – INSPECTION REQUIREMENTS

5-1 INSPECTION SCHEDULE

Continued airworthiness is contingent upon compliance with the following inspection items. These items shall be completed in conjunction with the rotorcraft Maintenance Inspection schedule, or other approved program, or upon removal and replacement of any component of Quick Release Step.

Daily Inspection

1. Inspection Area: Step
   a) Inspect the step attachment to the beams for condition and security. Ensure quick release mechanism is completely extended, flush with the outboard surface of the beam.

300 Hour or Annual Inspection

Refer to the ICA for the Quick Release Cargo Basket for inspection of mounting provisions.

1. Inspection Area: Step
   a) Visually inspect welds attaching end brackets to step extrusion for cracks, corrosion or other damage.
   b) Visually inspect step for damage.
   c) Visually inspect lugs attaching the step to the beams for security and damage.

Special Inspections

Following a hard landing inspect the Quick Release Step installation in accordance with the 300 hour or annual inspection listed above.

5-2 DAMAGE LIMITS / REPAIR INSTRUCTIONS

Refer to the ICA for the Quick Release Cargo Basket for further limits and repair instructions.

If damage is found in the inspections above, repair in accordance with the instructions below.

1. Step Assembly

Part	Type of Damage	Max. Allowable	Repair
Step Support Bracket	Corrosion	0.010" deep	Blend up to 0.010" deep with scotchbrite.
	Scratches / Nicks	0.010" deep x 0.5" long	Blend up to 0.010" deep with scotchbrite.
	Cracks/Dents	None	N/A
	Bent Lugs	None	N/A
Step Section	Corrosion	2" x 2" x 0.010" deep	Blend up to 0.010" deep with scotchbrite.
	Scratches / Nicks	0.010" deep x 1" long	Blend up to 0.010" deep with scotchbrite.
	Cracks / Dents	None	N/A
	Permanent Deflection of Step	0.25" max at middle of step	None

2. Steel Beams

Part	Type of Damage	Max. Allowable	Repair
Steel Beam	Corrosion	0.030" deep	Blend up to 0.030" deep with scotchbrite.
	Scratches / Nicks (Outboard face)	0.030" deep x 0.125" wide	Blend up to 0.030" deep with scotchbrite.
	Scratches / Nicks (all other sides)	0.060" deep x 0.125" wide	Blend up to 0.060" deep with scotchbrite.
	Cracks/Dents	None	N/A
	Elongation of Keyway	See figure 3	None
	Widening of slots	27/64" (0.422) diameter (check with a 27/64" drill)	None

Figure 3 – Keyway dimensions

5-3 PROTECTIVE TREATMENT INFORMATION

1. Step Assembly

The Step Assembly is supplied powder coated white. If the powder coat is damaged, touch up with white polyurethane paint. The tread area is painted with anti-skid paint. If the anti-skid paint is damaged, touch up with Randolph X1567 Wingwalk grip paint or equivalent.

CHAPTER 25 – EQUIPMENT AND FURNISHINGS

The Quick Release Step Installation may be applied to the right and/or left side of the helicopter. Refer to the ICA for the Quick Release Cargo Basket for installation and removal instructions for the mounting provisions.

25-1 STEP INSTALLATION

Refer to Figure 4.

1. Set upper attachment into upper keyway in forward and aft beams.
2. Lift step until lower attachment fitting hits stop. Push fitting into keyway and slide step down until locked.

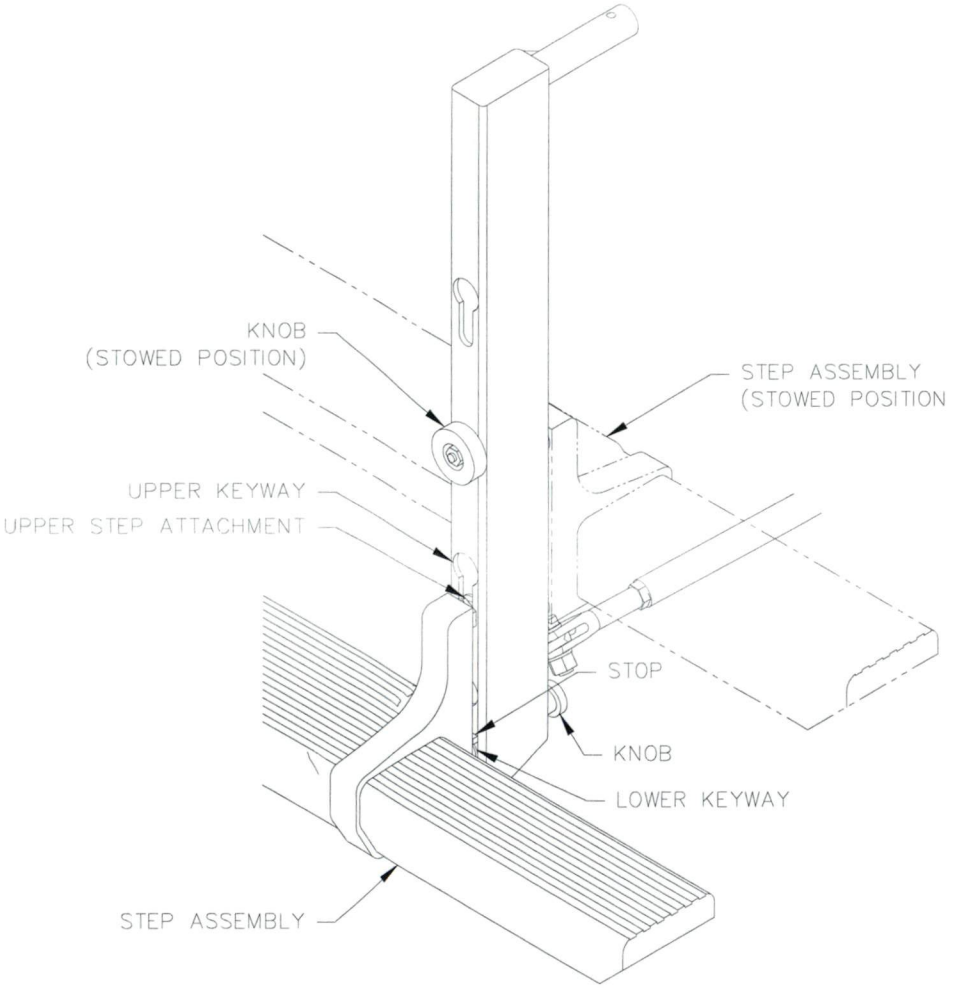

Figure 4 – Step Attachment

25-2 STEP REMOVAL

Refer to Figure 4.

1. Pull knob at bottom end of forward beam and lift step until lower attachment fitting is free of keyway. Keep upper attachment in keyway on beam.

2. Pull knob at bottom end of aft beam and lift step until lower attachment fitting is free of keyway. Keep upper attachment in keyway on beam.
3. Lift step until upper attachments are out of keyways on both beams and remove from helicopter.

25-3 WEIGHT AND BALANCE

Three weight and balance configurations are required for the pilot: Provisions only; Provisions and Step (outboard position); Provisions and Step (stowed position). These configurations are required as the step may be removed/installed in the field by the pilot.

Standard

P/N	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	moment
	Provisions Only	lb	in	in-lb	in	in-lb
82802-01	**Provisions Installation**	**11.2**	**85.6**	**958.7**	**-20.5**	**-229.6**
	Provisions and Step					
82910-01	Quick Release Step	5.0	82.1	410.5	-29.5	-147.5
82901-01	**Step Installation**	**16.2**	**84.5**	**1369.2**	**-23.3**	**-377.1**
	Provisions and Step (Stowed)					
82910-01	Quick Release Step	5.0	82.1	410.5	-23.7	-118.5
82901-01	**Step Installation**	**16.2**	**84.5**	**1369.2**	**-21.5**	**-348.1**

Metric

P/N	Description	Weight	Longitudinal		Lateral	
			arm	moment	arm	Moment
	Provisions Only	kg	mm	mm-kg	mm	mm-kg
82802-01	**Provisions Installation**	**5.1**	**2174**	**11087**	**-521**	**-2657**
	Provisions and Step					
82710-01	Quick Release Step	2.3	2085	4796	-749	-1723
82701-01	**Step Installation**	**7.4**	**2146**	**15883**	**-592**	**-4380**
	Provisions and Step (Stowed)					
82710-01	Quick Release Step	2.3	2085	4796	-602	-1385
82702-01	**Step Installation**	**7.4**	**2146**	**15883**	**-546**	**-4042**

Note: Lateral arms are given for left side installation. For installation on right side, lateral arms are positive.

25-4 STRUCTURAL FASTENER DATA

Refer to Maintenance Manual CSP-HMI-2, Section 20, for torque values not listed in this ICA.

MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

APPENDIX A-3 NORMAL CATEGORY ROTORCRAFT – CAR 527

BLOCK 1

Name of the applicant for the design change approval:	**Aero Design Ltd.**
Description of the design change:	**Installation of Quick Release Step on McDonnell Douglas MD600N**
Certification Basis of design change and revision date:	**FAR 27, Amendment 27-30**
CAR Standard A527.1(c) Program showing how changes to supplemental ICA made by the applicant or by the manufacturers of products and appliances installed in the aeroplane pursuant to the design change will be distributed:	**Section 0-3 of Supplemental ICA (ICA 829.90)**
CAR Standard 513.05 (1) (g) (iv): Installation Instructions:	**Installation Drawing 82901**

BLOCK 2

Note: Enter "N/A" when no supplemental ICA are needed.

Regulatory Standard Reference Column 1	Design Approval Holder (DAH) ICA Reference Column 2	Applicant Means of Compliance Supplemental ICA Requirements Column 3
A527.2 (a) Manual(s) *(a)* The Instructions for Continued Airworthiness must be in the form of a manual or manuals as appropriate for the quantity of data to be provided.	ICA ref: McDonnell Douglas MD600N Maintenance Manual CSP-HMI-2	Supplemental ICA ref: Single Manual (ICA829.90)
A527.2 (b) Practical arrangement *(b)* The format of the manual or manuals must provide for a practical arrangement.	ICA ref: Arranged in ATA format	Supplemental ICA ref: Arranged in ATA format
A527.3 The Instructions for Continued Airworthiness must contain the following manuals or sections, as appropriate, and information:		
A527.3 (a) Rotorcraft maintenance manual or section		
A527.3 (a) (1) (Introduction) (1) Introduction information that includes an explanation of the rotorcraft's features and data to the extent necessary for maintenance or preventive maintenance.	ICA ref: CSP-HMI-2, Section 01	Supplemental ICA ref: Section 0-1
A527.3 (a) (2) (Description) (2) A description of the rotorcraft and its systems and installations including its engines, rotors, and appliances.	ICA ref: CSP-HMI-2, Section 01	Supplemental ICA ref: Section 0-5

MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

Regulatory Standard Reference Column 1	Design Approval Holder (DAH) ICA Reference Column 2	Applicant Means of Compliance Supplemental ICA Requirements Column 3
A527.3 (a) (3) Control & Operation (3) Basic control and operation information describing how the rotorcraft components and systems are controlled and how they operate, including any special procedures and limitations that apply.	ICA ref: CSP-HMI-2, Section 01	Supplemental ICA ref: N/A
A527.3 (a) (4) Servicing (4) Servicing information that covers details regarding servicing points, capacities of tanks, reservoirs, types of fluids to be used, pressures applicable to the various systems, location of access panels for inspection and servicing, locations of lubrication points, lubricants to be used, equipment required for servicing, tow instructions and limitations, mooring, jacking, and levelling information.	ICA ref: CSP-HMI-2, Section 12	Supplemental ICA ref: N/A
A527.3 The Instructions for Continued Airworthiness must contain the following manuals or sections, as appropriate, and information:		
A527.3 (b) Maintenance Instructions.		
A527.3 (b) (1) Scheduling 1) Scheduling information for each part of the rotorcraft and its engines, auxiliary power units, rotors, accessories, instruments, and equipment that provides the recommended periods at which they should be cleaned, inspected, adjusted, tested, and lubricated, and the degree of inspection, the applicable wear tolerances, and work recommended at these periods. However, the applicant may refer to an accessory, instrument, or equipment manufacturer as the source of this information if the applicant shows that the item has an exceptionally high degree of complexity requiring specialized maintenance techniques, test equipment, or expertise. The recommended overhaul periods and necessary cross-references to the Airworthiness Limitations section of the manual must also be included. In addition, the applicant must include an inspection program that includes the frequency and extent of the inspections necessary to provide for the continued airworthiness of the rotorcraft.	ICA ref: CSP-HMI-2, Section 05	Supplemental ICA ref: Section 5-1
A527.3 (b) (2) Troubleshooting (2) Troubleshooting information describing probable malfunctions, how to recognize those malfunctions, and the remedial action for those malfunctions.	ICA ref: N/A	Supplemental ICA ref: N/A

MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

Regulatory Standard Reference Column 1	Design Approval Holder (DAH) ICA Reference Column 2	Applicant Means of Compliance Supplemental ICA Requirements Column 3
A527.3 (b) (3) Removal/replacement (3) Information describing the order and method of removing and replacing products and parts with any necessary precautions to be taken.	ICA ref: CSP-HMI-2, Section 25	Supplemental ICA ref: Section 25-1 and 25-2
A527.3 (b) (4) General (4) Other general procedural instructions including procedures for system testing during ground running, symmetry checks, weighing and determining the center of gravity, lifting and shoring, and storage limitations.	ICA ref: CSP-HMI-2, Section 07 and 08	Supplemental ICA ref: Section 25-3
A527.3 (c) Access *(c)* Diagrams of structural access plates and information needed to gain access for inspections when access plates are not provided.	ICA ref: N/A	Supplemental ICA ref: N/A
A527.3 (d) Special inspections *(d)* Details for the application of special inspection techniques including radiographic and ultrasonic testing where such processes are specified.	ICA ref: CSP-HMI-2, Section 05	Supplemental ICA ref: Section 5-1
A527.3 (e) Protective treatment *(e)* Information needed to apply protective treatments to the structure after inspection.	ICA ref: CSP-HMI-2, Section 20	Supplemental ICA ref: Section 5-3
A527.3 (f) Fasteners, torque values, etc *(f)* All data relative to structural fasteners such as identification, discard recommendations, and torque values.	ICA ref: CSP-HMI-2, Section 20	Supplemental ICA ref: Section 25-4
A527.3 (g) Special tools *(g)* A list of special tools needed.	ICA ref: N/A	Supplemental ICA ref: N/A

MSI 53 – Review of Supplemental Instructions for Continued Airworthiness

BLOCK 3

Note: The statement in block 5 does not constitute an approval of the Airworthiness Limitations Section. Airworthiness Limitations differ from other maintenance tasks, in that they are mandatory, as a direct condition of the approval of the type design. They are therefore referenced directly in the approval document itself. However, they must also be included in the Supplemental Instructions for Continued Airworthiness.

A527.4 AWL - Separate Section 1 The Instructions for Continued Airworthiness must contain a section titled Airworthiness Limitations that is segregated and clearly distinguishable from the rest of the document. This section must set forth each mandatory replacement time, structural inspection interval, and related structural inspection procedure approved under 527.571. If the Instructions for Continued Airworthiness consist of multiple documents, the section required by this paragraph must be included in the principal manual. This section must contain a legible statement in a prominent location that reads: "The Airworthiness Limitations section is approved by the Minister and specifies maintenance required by any applicable airworthiness or operating rule unless an alternative program has been approved by the Minister."	ICA ref: CSP-HMI-2, Section 04	Supplemental ICA ref: Section 4

BLOCK 4 – Applicant Statement of Compliance

The Supplemental ICA referenced above comprises the complete listing of supplemental ICA necessary to show compliance with the regulatory standard that supports this change in type design.

Applicants Signature: _____ **Date:** November 27. 2008

Applicants Name: E. Burgoin, P.Eng, DAR 290M

BLOCK 5 – Minister's Statement of Acceptability

The design change is adequately supported by existing ICA and/or supplemental ICA, as identified above and is acceptable to the Minister.

Reviewer's Name:_____ **Phone #** _____ **Email:** _____ **Mail Routing Symbol:** _____

Signature: _____ **Date:** _____ **NAPA Number** _____

AERO Design Ltd.

ENGINEERING REPORT
ER829.01

QUICK RELEASE STEP INSTALLATION

McDonnell Douglas MD600N

Approved: E. Burgoin, P. Eng.

Prepared by: Jeff Clarke

Revision 0
Date: 26 November, 2008

AERO Design Ltd.
Engineering Consultants

2013 – 39th Avenue N.E., Calgary, Alberta T2E 6R7
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TABLE OF CONTENTS

1.0 INTRODUCTION

When the quick release cargo basket is removed from the helicopter, it is desirable to install a flight step to aid ingress and egress from the cabin without removing the basket provisions. This installation uses the existing mounting beams for the cargo baskets and uses the same locking mechanism to retain the step in place.

2.0 REFERENCE

AERO Design Ltd. Drawings 82901

MIL-HDBK-5J

3.0 BASIS OF CERTIFICATION

McDonnell Douglas MD600N – TCDS H-95:

FAR 27, dated October 2, 1964, through Amendment 27-30 with the following deviations: 27.562 and 27.863 excluded (earlier models did not have these requirements); 27.561 at Amendment 27-24; 27.607 at Amendment 27-3; 27.785 at Amendment 27-20; 27.1325 at Amendment 27-12.

Transport Canada Additional Airworthiness Requirements as published in the Canadian Airworthiness Manual, Chapter 527, change 3 dated 1 January 1994: 527.1093(b)(iii); 527.1301-1; 527.l557(c)(3); 527.1581(e); 527.1585(h) Operating Procedures.

This report demonstrates that the installation of the Quick Release Step complies with the original basis of certification.

4.0 ANALYSIS OF CURRENT AIRWORTHINESS DIRECTIVES (AD'S)

This installation does not impact on any current ADs.

5.0 LOADS

5.1 Inertia Loads

W_{step} = 5.0 lbs — Weight of step

n_{man_pos} = 3.5 — Limit positive maneuvering load factor (Ref: FAR 29.337)

n_{sf} = 1.5 — Safety Factor (Ref: FAR 29.303)

$n_{ult\_man\_pos} = n_{man\_pos} \times n_{sf}$

$n_{ult\_man\_pos} = 3.5 \times 1.5 = 5.25$ — Ultimate positive maneuvering load factor

$P_{ult\_man\_pos} = W_{step} \times n_{ult\_man\_pos}$

$P_{ult\_man\_pos}$ = 26.3 lbs — Ultimate positive maneuvering load

The quick release step is not intended to be used in flight. As such, there is no requirement for the application of maneuvering inertia loads due to a person on the step. However, the step is checked for ultimate inertia load applied by two people jumping on the step at 2g.

W_{person} = 170 lbs — Weight of person

$P_{ult\_man\_pos} = W_{person} \times 2 \times 2g$

$P_{ult\_man\_pos}$ = 680 lbs — Load applied to step by 2 people jumping

5.2 Aerodynamic Load

Drag

$A_f := 10.2 \cdot in^2$ — Frontal Area of Step

$V_{ne} := 155 \cdot knots$ — Never Exceed Speed of MD600N

$V_d := \frac{V_{ne}}{0.9}$

$V_d = 172.2 knots$ — Design Dive Speed

$\rho := 0.002378 \frac{slug}{ft^3}$ — Air Density at Sea Level

$C_{Do} := 2.0$ — Coefficient of Drag (conservative)

$$P_{drag} := \frac{\rho}{2} \cdot V_d^{\,2} \cdot A_f \cdot C_{Do}$$

$P_{drag} = 14.2\text{lbf}$ Limit drag at V_d

$n_{sf} := 1.5$ Factor of Safety

$P_{drag\_ult} := P_{drag} \cdot n_{sf}$

$P_{drag\_ult} = 21.3\text{lbf}$ Ultimate drag at V_d

Lift

$A_{lift} := 3.4\text{in} \cdot 46.0\text{in}$

$A_{lift} = 156.4\text{in}^2$ Planar area of step (largest)

Coefficient of lift for round tubes relative to airflow varies from near 0 at 0° to 0.4 at about 60°.

$C_L := 0.4$ Coefficient of lift (Max. for a round tube, ~60° to air flow) (ref: Hoerner, Fig. 18)

$$P_{lift} := C_L \cdot \frac{\rho}{2} \cdot V_d^{\,2} \cdot A_{lift}$$

$P_{lift} = 43.6\text{lbf}$ Limit lift on step at V_d

$P_{lift\_ult} := P_{lift} \cdot n_{sf}$

$P_{lift\_ult} = 65.4\text{lbf}$ Ultimate lift on step at V_d

6.0 STRUCTURAL COMPLIANCE

The aerodynamic drag load is very small and by inspection can be carried by the step assembly and its attachments.

The aerodynamic lift generated by the step is applied similar to the down load tested below, only upward. The downward test is sufficient to demonstrate the lift load.

A Quick Release Step Assembly was fabricated in accordance with drawing 82910. The Quick Release Provisions were mounted to a jig simulating the helicopter attachments.

The step was loaded with 700 lbs of lead shot (28 bags @ 25 lbs), evenly distributed over the surface of the step. It was checked for deflection before and after the test.

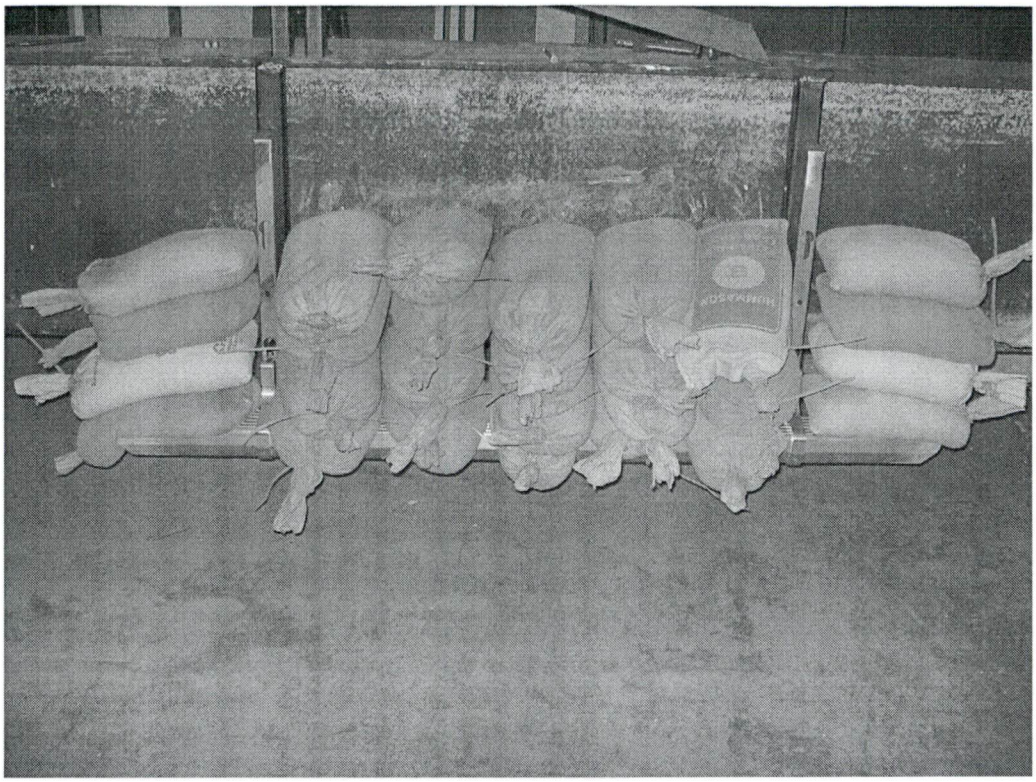

Figure 1 – Down Load on Step Assembly

With the load removed there was no permanent deformation found.

The Provisions have been demonstrated to be acceptable for 200 lbs in a cargo basket weighing 45 lbs (245 lbs total) at ultimate maneuvering load (5.25g). Refer to ER828.01. The installation is acceptable for installation on McDonnell Douglas MD600N helicopters.

7.0 COMPLIANCE WITH 27.251 AND 27.629

The frontal and planar area of the step is significantly smaller than the area of the cargo basket which uses the same mounting provisions. The step section is a closed section so it is torsionally rigid and will not allow flexing between the attachments. The conclusion that can be drawn from these properties is that the aerodynamic loading or turbulence shedding from the step will be significantly less than from the basket, and are expected to be similar to the basic unmodified helicopter.

The effects of vibration (27.251) and flutter (27.629) have been considered over the flight regime of the helicopter, and there is no effect.

AERO DESIGN LTD.
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www.aerodesign.ca

26 November, 2008

Transport Canada
Aircraft Certification Division
800-1601 Airport Road
Calgary, Alberta
T2E 6Z8

FAXED
27 NOV 2008
9:30 AM

Attn: Greg Oucharek

Your File : C-08-0969
Our File : 828/829

Re: McDonnell Douglas MD600N Cargo Basket / Cabin Step Installation

Greg,

Please find attached the following documents related to this project:

Modification Approval Request Application Form	MOD828	Rev. 0
Compliance Program	CP828	Rev. 0
Project Summary	PS828	Rev. 0
Compliance Program	CP829	Rev. 0
Project Summary	PS829	Rev. 0

Please extend my delegation to include the paragraphs indicated on the attached compliance programs.

Regards,

E. Burgoin, P.Eng, DAR 290M

Encl.

Title: **Quick Release Cabin Step Installation**

Approval: STC

Manufacture: Mfd by Aero Design (amend Approved Producuct List)

Customer:

Type and Model: McDonnell Douglas MD600N

Definition Of Change:

Description:

When the Quick Release provisions are installed, but the Cargo Basket is removed, it is necessary to have a step to ease access to the cabin. The Quick Release Cabin Step locks into the Quick Release Provisions, and may be stowed on the inboard side of the provisions when the basket is installed.

Primary Changes to the Aeronautical Product:

Installation of Quick Release Cabin Step

Secondary Changes to the Aeronautical Product (Required as consequence of primary changes):

Installation of Quick Release Mounting Provisions

Other Relevant Modifications to the Aeronautical Product (Which impact on this change):

CHANGED PRODUCT RULE (CPR) DECISION RECORD		
NAPA No.:		
Step 1: Identify the proposed change to the aeronautical product. (Section 4.1 of AC 500-016)	The changes are as previously described.	
Step 2: Is the change substantial? (Section 4.2 of AC 500-016)	☐ Yes ☒ No	A new type certificate is required. CPR Decision Process is **Closed**. Proceed to Step 3
Step 3: Will the latest standards be used? (Section 4.3 of AC 500-016)	☐ Yes ☒ No	Certification basis to use latest standards. CPR Decision Process is **Closed.** Proceed to Step 4.
Step 4: Is the proposed change significant? (Section 4.4 of AC 500-016)	☐ Yes ☒ No	Proceed to Decision. Compliance may be shown to earlier standards. Certification basis to be defined and documented as indicated (below). CPR Decision Process is **Closed**.
Decision: Will the latest standards be used?	☐ Yes ☒ No	Certification basis to use latest standards. CPR Decision Process is **Closed.** Proceed to Step 5, addressing each area separately (see below).
Identification of Affected Areas:	The area(s) affected by the proposed change have been detailed in Compliance Program: CP829	
Note: A delegate may develop a proposal for the Yes/No decision of Step 6, however, TCCA will make the final determination.		
Area:		
Step 5: Is this area affected by the proposed change? (Section 6.1 of AC 500-016)	☐ Yes ☒ No	Proceed to Step 6. Compliance with the latest standards is not required. Compliance may be shown to earlier standards. Certification basis defined or documented as indicated below.
Step 6: Are the latest standards practical and do they contribute materially to the level of safety? (Section 6.2 of AC 500-016) ☐ Continuation Sheet(s) Attached	☐ Yes ☒ No	Certification basis to be established using latest standards. Compliance with the latest standards is not required. Compliance may be shown to earlier standards. Certification Basis defined or documented as indicated in below. **Note:** Several standards may apply to each area and the assessment may differ from standard to standard. Indicate Yes if compliance with any latest standard(s) will be required. Indicate No only if no later standards are to be applied.
Certification Basis	The certification basis is as follows or as detailed in the listed document(s): McDonnell Douglas MD600N, TCDS : FAR 27, dated October 2, 1964, through Amendment 27-30 with the following deviations: 27.562 and 27.863 excluded; 27.561 at Amdt. 27-24; 27.607 at Amdt. 27-3; 27.785 at Amdt. 27-20; 27.1325 at Amdt, 27-12; Transport Canada CAM 527, change 3 dated January 1, 1994: 527.1093(b)(iii); 527.1301-1; 527.1557(c)(3); 527.1581(e); 527.1585(h)	

Under the delegated authority, I have examined the change in type design listed above according to established procedures and hereby determine, to the best of my knowledge and belief, that it is. (check one)

- ☐ substantial, pursuant to subsection 511.14 or 513.14 of the CARs
- ☐ significant, pursuant to subsection 511.13(3) or 513.07(3) of the CARs
- ☒ not significant, pursuant to subsection 511.13(3) or 513.07(3) of the CARs

E. Burgoin, P. Eng., DAR 290M — 24 November, 2008 (Date)

APPLICANT: AERO Design Ltd.
2013 39th Avenue NE
Calgary, Alberta, T2E 6R7

DATE: 24 November, 2008
REV. No. 0

MAKE: McDonnell Douglas
MODEL: 600N

CORRESPONDANCE TO:
(If other than applicant)

REGISTRATION: All Applicable
SERIAL No.: All Applicable

NATURE OF WORK: Installation of Quick Release Cabin Step

MODEL CERTIFICATION BASIS: FAR 27, Amendment 27-30, with exceptions as noted below.
MODIFICATION CERTIFICATION BASIS: FAR 27, Amendment 27-30, with exceptions as noted below.

Airworthiness Requirement Paragraph	Amdt.	Subject for Compliance or Documentary Proof	Form of Substantiation	DOT	DAR	Comments
Subpart B – Flight						
27.29	30	Empty Weight and Corresponding C of G	Data specified on inst'n drawing		X	
27.251	30	Vibration	Statement in Report		**	
Subpart C – Strength Requirements						
27.301	30	Loads – Air Drag Loads	Analysis		X	
27.301	30	Loads – Inertia Loads	Compliance with 27.337 and 27.561		X	
27.303	30	Factor of Safety	Analysis		X	
27.305	30	Strength and Deformation	Analysis and Test iaw AC 43.13-1A		X	
27.307	30	Proof of Structure	Analysis and Test iaw AC 43.13-1A		X	
27.337(a)	30	Limit Maneuvering Load Factor – Positive	Analysis and Test iaw AC 43.13-1A		X	Critical load factor in downward direction.
27.561	24	Emergency Landing Conditions	N/A			Step is located below cabin, not above or behind occupants.
Subpart D – Design and Construction						
27.601	30	Design	Drawings		X	Design is conventional.
27.603	30	Materials	Drawings		X	Materials used are specified in Mil-Hdbk-5H.
27.605	30	Fabrication Methods	Drawings		X	Design is conventional.
27.609	30	Protection of Structure	Drawings		X	
27.611	30	Inspection Provisions	Drawings		X	Design is easy to inspect.

Airworthiness Requirement		Subject for Compliance or Documentary Proof	Form of Substantiation	DOT	DAR	Comments
27.613	30	Material Strength Properties and Design Values	Values used as per Mil-Hdbk-5H		X	
27.625	30	Fitting Factor	Analysis		X	
27.629	30	Flutter	Statement in Report		**	
27.783	30	Doors	N/A			Installation does not block doors.
27.807	30	Emergency Exits	N/A		X	Installation does not block doors.
Subpart G – Operating Limitations and Information						
27.1505	30	Never Exceed Speed	N/A			No change from Type Approval
27.1529	30	Instructions for Continuing Airworthiness	ICA Provided	X		
27.1581	30	Rotorcraft Flight Manual – General	Flight Manual Supplement	X		Installation/Removal instructions included in Cargo Basket FMS
Airworthiness Manual Requirements						
527.1581(e)		Rotorcraft Flight Manual – Units	SI and Imperial Units provided in Flight Manual Supplement	X		

Items marked ** indicate chapters where extension of delegation is requested.